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EXAMINER

KLINGER, SCOTT M

ART UNIT PAPER NUMBER

2153

DATE MAILED: 06/06/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/717,674

Applicant(s)

KRUY ET AL.

Examiner

Scott M. Klinger

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 6 January 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1,2,4-21,23,25-34 and 36-39 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1,2,4-21,23,25-34 and 36-39 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- ☒ Notice of References Cited (PTO-892)
- ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____
- ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- ☐ Notice of Informal Patent Application (PTO-152)
- ☐ Other: _____

DETAILED ACTION

Claims 1, 2, 4-21, 23, 25-34, and 36-39 are pending.

Response to Arguments

Applicant's arguments, with respect to the rejection of claims 12-14 and 30 under 35 USC § 102 have been fully considered and are persuasive. Therefore, the rejection has been withdrawn. However, upon further consideration, a new ground(s) of rejection is made in view of Sridhar.

Applicant's arguments with respect to claims 1, 2, 4-11, 15-21, 23, 25-29, 31-34, and 36-39 have been considered but are moot in view of the new ground(s) of rejection, based on amendments.

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claim 15 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Claim 15 recites the limitation "*the application program*" on page 15. There is insufficient antecedent basis for this limitation in the claim.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant

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for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 1, 7, 8, 10, 11, 15-18, 28, 31-33, 36-39 are rejected under 35 U.S.C. 102(e) as being anticipated by Sridhar et al. (U.S. Patent Number 6,098,108, hereinafter "Sridhar"). Sridhar discloses a distributed directory for enhanced network communication. Sridhar shows,

In referring to claims 1, 7, 8, 11, 15-18, 28, 31-33, 36-39,

- An application interface of a client computer receiving a request from an application program:

Sridhar, Fig. 6 shows an application interface 663 that receives requests from an application program 611

- The application interface associating a transaction identifier with the request, wherein the transaction identifier identifies a transaction that the request is associated with:

Sridhar shows creating a socket and a handle for said socket (Fig. 10)

- The application interface forming a message including the transaction identifier and the request:

"When a gateway computer connects an XTP context, context handler 1328 finds the destination TCP address for a server computer in a local table 1322 and initiates an execution thread to handle communication with that gateway computer and the server computer." (Sridhar, col. 21, lines 54-59)

- The application interface sending the message to a server comprising the steps of, opening a connection with the server, sending the message over the connection, initializing a timer upon receipt of a reply from the server, determining whether a timeout period has expired before another request is received from the application program, and closing the connection when the timeout period has expired:

"An XTP based communication path between gateway computer 612 and a remote communication server is maintained for a period of time after all contexts are closed. If the client application tries to open a new connection to the remote communication server

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during this period, the connection is open with very little overhead. The period of time the connection persists, the "keep-alive time," can be a fixed interval or can be determined adaptively based on past communication characteristics." (Sridhar, col. 18, lines 59-67)

- The server receiving the message; the server processing the request in a context of the transaction identified by the transaction identifier in the message:

A system in which a reply is received by a server, inherently implies that said server received the sent message and processed said message

In referring to claim 10,

- Multiplexing together multiple requests that are destined for the server; and sending the multiple requests to the server in a multiplexed format:

"Multiplexing enables one to use a single instance of the XTP protocol executing for a pair of computers communicating using XTP to handle multiple logical data streams between the two computers. This multiplexing capability is in contrast to TCP in which a separate instance of the TCP protocol executes independently for each logical data stream." (Sridhar, col. 13, lines 9-15)

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 2, 5, 6, 9, 20, 29 and 34 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sridhar in view of Chorn (U.S. Patent Number 6,275,843, hereinafter "Chorn").

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In referring to claims 2, 9, 20, 29 and 34, although Sridhar shows substantial features of the claimed invention, Sridhar does not show associating a sequence indicator with the request. Nonetheless this feature is well known in the art and would have been an obvious modification to the system disclosed by Sridhar as evidenced by Chorn.

In analogous art, Chorn discloses a method and apparatus for processing multiple service requests within a global transaction by a single server application program instance. Chorn shows the application interface associating a sequence indicator to the request, wherein the sequence indicator indicates in what sequence the server should process the request within the context of the transaction; and wherein forming the message comprises including the sequence indicator in the message: Chorn, Fig. 4 shows service requests having sequence indicators

Given these teachings, a person of ordinary skill in the art would have readily recognized the desirability and advantages of modifying the system of Sridhar so as to use a sequence indicator, such as taught by Chorn, in order to avoid problems caused by processing transaction steps out of order.

In referring to claim 21, Sridhar in view of Chorn shows,

- Sequencing the request by placing the request, and other requests that comprise the transaction, in a transaction queue associated with the transaction; and wherein processing the request comprises processing the request in a sequence of requests in the transaction queue:

Chorn, Fig. 4 shows service requests having sequence indicators and processing said request in the order of the sequence indicators. A client-server system implies queues on either end to buffer received packets.

In referring to claim 5, although Sridhar shows substantial features of the claimed invention, Sridhar does not show connecting to a database. Nonetheless this feature is well known in the art and would have been an obvious modification to the system disclosed by Sridhar as evidenced by Chorn.

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In analogous art, Chorn discloses a method and apparatus for processing multiple service requests within a global transaction by a single server application program instance. Chorn shows the server allocating a database connection to the transaction; and the server processing the requests that form a part of the transaction over the database connection allocated to the transaction: *"A global transaction consists of multiple, coordinated database updates, possibly occurring on different computers. Global transactions are used when it is important that all databases are synchronized so that either all updates are made or none are made."* (Chorn, col. 2, lines 45-49), a system in which a server connects to a database inherently implies allocating a connection to said database

Given these teachings, a person of ordinary skill in the art would have readily recognized the desirability and advantages of modifying the system of Sridhar so as to connect to a database, such as taught by Chorn, in order to process transactions that require database access.

In referring to claim 6, Sridhar in view of Chorn shows,

- The application interface including a sequence indicator in the message, wherein the sequence indicator indicates in what sequence the server should process the request within the context of the transaction; and wherein processing the requests comprises processing the requests in an order indicated by the sequence indicator:

Chorn, Fig. 4 shows service requests having sequence indicators and processing said request in the order of the sequence indicators

Claims 12, 13, 14, and 30 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sridhar.

In referring to claims 12 and 30, although Sridhar shows substantial features of the claimed invention, Sridhar is silent as to the reception of redirect requests. Sridhar does not explicitly show redirecting to a second server without involving the application program. Nonetheless this feature is well known in the art and would have been an obvious implementation of the system

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disclosed by Sridhar.

Sridhar shows a system that uses sockets to control network communication, keeping the application separate from said communication. If a redirect request were received by the communication module of Sridhar, it would not involve the application to resend the message to the new server. A person of ordinary skill in the art would have readily recognized the desirability and advantages of using the system of Sridhar so as to respond to redirect requests, in order to connect to server systems that redirect clients to other servers.

In referring to claim 13, Sridhar shows,

- Opening a connection with the server, sending the message over the connection, initializing a timer upon receipt of a reply from the server, determining whether a timeout period has expired before another request is received from the application program, and closing the connection when the timeout period has expired:

"An XTP based communication path between gateway computer 612 and a remote communication server is maintained for a period of time after all contexts are closed. If the client application tries to open a new connection to the remote communication server during this period, the connection is open with very little overhead. The period of time the connection persists, the "keep-alive time," can be a fixed interval or can be determined adaptively based on past communication characteristics." (Sridhar, col. 18, lines 59-67)

In referring to claim 14, Sridhar shows,

- Storing the redirect request so that the subsequent similar requests can be initially directed to the second server rather than to the first server:

Sridhar uses sockets to associate connections with the client application, when a redirect changes the destination for the socket, it will be stored for subsequent requests

Claims 19-21, 23, and 25-27 are rejected under 35 U.S.C. 103(a) as being unpatentable over Chorn.

In referring to claim 19, Chorn shows substantial features of the claimed invention, including:

- Receiving a message from a client:

Chorn, Fig. 1 shows an application interface made up of a resource manager 16, a transaction manager 18, and a communication resource manager 20, which receives requests from application program 14

- The message includes a transaction identifier that indicates that a request specified in the message should be performed in a context of a transaction:

"The APs begin and end transactions under the control of a Transaction Manager (TM) 18. The TM is a system software component that assigns transaction identifiers to global transactions, monitors their progress, coordinates their completion, and coordinates failure recovery. The TM enforces the transaction property of atomicity. If a global transaction is being processed, the TM adheres to the two-phase Commit transaction processing protocol." (Chorn, col. 7, lines 13-20)

- Processing the request in the context of the transaction identified by the transaction identifier:

Chorn, Fig. 4 shows forming a message including the transaction identifier and the request; and sending the message to a server

- Reserving a database connection for the transaction between the server and a database corresponding to the transaction:

"A global transaction consists of multiple, coordinated database updates, possibly occurring on different computers. Global transactions are used when it is important that all databases are synchronized so that either all updates are made or none are made." (Chorn, col. 2, lines 45-49), a system in which a server connects to a database inherently implies allocating a connection to said database

- Determining whether a free connection to the database is available:

A system in which a server connects to a database inherently implies determining if said database is free

However, Chorn is silent as to what happens when connections to databases are not available. Chorn does not explicitly show reserving the database connection or stalling the request until the database is available. Nonetheless this feature is well known in the art and would have been an obvious implementation of the system disclosed by Chorn.

The system of Chorn involves coordinating database updates: *"A global transaction consists of multiple, coordinated database updates, possibly occurring on different computers. Global transactions are used when it is important that all databases are synchronized so that either all updates are made or none are made."* (Chorn, col. 2, lines 45-49)

A person of ordinary skill in the art would have readily recognized the desirability and advantages of implementing the system of Chorn so as to reserve a database connection, in order to complete the database transaction when the database is no longer busy.

In referring to claim 20, Chorn shows,

- The message includes a sequence indicator which indicates a sequence, within the transaction, that the request should be processed, and wherein processing the request comprises processing the request in the sequence:

Chorn, Fig. 4 shows service requests having sequence indicators and processing said request in the order of the sequence indicators

In referring to claim 21, Chorn shows,

- Sequencing the request by placing the request, and other requests that comprise the transaction, in a transaction queue associated with the transaction; and wherein processing the request comprises processing the request in a sequence of requests in the transaction queue:

Chorn, Fig. 4 shows service requests having sequence indicators and processing said request in the order of the sequence indicators. A client-server system implies queues on either end to buffer received packets.

In referring to claim 23, Chorn shows,

- Determining whether a free connection to the database is available; and if the free connection is available, reserving the database connection by mapping the transaction identifier to the free connection:

Chorn, col. 2, lines 45-49 (see full quote above), a system in which a server connects to a database inherently implies connecting to the database if said database is free

Claim 25 are rejected under 35 U.S.C. 103(a) as being unpatentable over Chorn. Although Chorn shows substantial features of the claimed invention, Chorn is silent as to what happens when connections to databases are not available. Chorn does not explicitly show determining if a maximum number of connections has been made to the database or stalling the request until the database is available. Nonetheless this feature is well known in the art and would have been an obvious implementation of the system disclosed by Chorn.

The system of Chorn involves coordinating database updates: *Chorn, col. 2, lines 45-49* (see full quote above)

A person of ordinary skill in the art would have readily recognized the desirability and advantages of implementing the system of Chorn so as to determine whether a maximum number of database connections had been reached and stalling the requests to said database, in order to complete the database transactions when the database is no longer busy.

In referring to claim 26, Chorn shows,

- Closing the connection when the transaction is committed or aborted:

Chorn Fig. 4 shows the server sends a done message when the transaction is completed effectively closing the connection

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In referring to claim 27, Chorn shows,

- Deallocating the connection when the transaction is committed or aborted:

Chorn Fig. 4 shows the server sends a done message when the transaction is completed effectively deallocating the connection

Conclusion


Any inquiry concerning this communication or earlier communications from the examiner should be directed to Scott M. Klinger whose telephone number is (571) 272-3955. The examiner can normally be reached on M-F 9:00am - 5:30pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Glenn Burgess can be reached on (571) 272-3949. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Scott M. Klinger
Examiner
Art Unit 2153

smk


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